SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,
PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE UNIVERSITY, PHILADELPHIA, AND GERMAN HOSPITALS.

THE SUPPRESSION OF DRAINAGE IN MAJOR SURGICAL OPERATIONS.

At a recent meeting of the Société de Chirurgie (*L'Union Médicale*, May 9, 1889), JULES BŒCKEL read a communication upon the above subject. After having for some time left in his drains for twenty-four hours; he now had come to omitting them completely. He had at first done this only in minor operations, but now he employed no permanent drainage whatever. He gave the results obtained in thirty-three major operations of every sort, among which were extirpation of the breast, resection of the knee, amputation of the thigh, excision of cervical and inguinal glands, etc. Among his thirty-three cases he had but two deaths. One was from tuberculous meningitis and the other from pneumonia.

Most of the operations were exceptionally grave and complicated, as, for example, one for removal of the breast, the axillary glands, and the glands from below and above the clavicle, necessitating an osteotomy of that bone and a suture of the divided ends; no drainage was employed and the wound healed in fifteen days under one dressing.

In resection of the knee he obtained entire union of the wound without suppuration, in from twenty-five to thirty days. To procure these results he thinks the most essential factor is rigorous antisepsis during the course of the operation. He recommends washing the hands frequently in hot water and in sublimate solution, the avoidance of sponges, drying the wound with antiseptic gauze, using as few ligatures as possible, putting in sometimes a "pseudo drain" made of an absorbable crayon of iodoform, and, finally, using only a single dressing with firm compression.

In the discussion which ensued, Ségond thought that drainage should only be omitted in cases where there was complete asepsis, and in which it was possible to make prolonged compression.

Ollier, while often prompted to omit drainage in resections of the knee, had never dared to do so. He thought that in old cases where there are peri-articular purulent foci, it is not safe to dispense with the drains. We may adopt a middle plan in the use of absorbable drains, such as catgut threads, decalcified bone, etc.

Réclus has not employed drainage since 1887. He has had excellent results and has had few cases of suppuration.

TREATMENT OF EMPYEMA BY A VALVULAR TUBE HERMETICALLY SEALED TO THE CHEST.

DR. WILLIAM WILLIAMS describes (*British Medical Journal*, May 18, 1889) a method of treatment of empyema by means of a valvular tube, the principle of which consists in the taking away of the atmospheric pressure from the external surface of the lung while the opening in the chest-wall still remains, and so enabling the organ to fulfil its functions and to fill up its side of the chest from the first, without waiting for any falling-in of the side to take place; in other words, to cause the lung to expand at the commencement instead of at the end of the treatment.

The method of carrying out this principle is the following: A rubber tube a yard and a half in length, and of a thickness that will admit of its being introduced through a canula of the ordinary size used to open empyemas, is taken, and one end is introduced into the chest by this means; over the tube, starting from the free end, is next run up an oval, slightly curved—concave toward the chest—metal plate or shield, three inches by two inches, having a metal tube half an inch long soldered in a hole in its centre, and projecting on the convex side only; through this the drainage tube passes as the shield is run up to the chest, and they should, of course, fit each other air-tight. Now, between the plate and the chest stiff ointment or dressing, or a layer of soft rubber jointing, or what not, is placed so as to form an air-tight joint, when the whole is finally firmly strapped down and bandaged.

At the free end of the drainage tube, there is fixed by means of a piece of glass tubing a valve that opens outward, and the contrivance is complete. The valve end of the tube when in use is placed in a bottle containing some antiseptic solution, as the valve acts best in a liquid, and the bottle forms a convenient and cleanly method of dealing with the discharge of pus. Lastly, once or twice each day the valve is removed and the chest washed out by simply elevating and lowering the bottle and changing its contents.

It is essential that this should be done often at first, to thin the pus, which is then frequently very thick, presenting while in that state greater difficulties to its expulsion through the valve than when more fluid, and no obstacle should on any account be allowed to cause a postponement of the application of the valve for a single day.

Dr. Williams reports three cases in which the results were most favorable.

RETROGRADE DILATATION OF STRICTURES OF THE ŒSOPHAGUS.

HAGENBACH (*Correspondenz-Blatt für Schweitzer Aerzte*, No. 5, 1889) reports two cases of stricture of the œsophagus in which dilatation by the mouth was unsucessful in relieving the patient, but which yielded to bougies passed from the stomach after the operation of gastrostomy.

The first case occurred in a fifty-two year old stonecutter. The patient's father died of consumption. Patient himself healthy excepting one attack of typhus fever. Suffered from lung trouble for some years. This was diagnosticated as fibroid phthisis. In July, 1887, he noticed that he could no longer swallow large morsels of flesh or other solid food. The particles remained for some time near the stomach, and then together with some phlegm were eructated. The dysphagia steadily increased, so that in October the patient could only eat moistened bread and spoon-food. At this time there were occasional pains in the region of the sternum. For five weeks he has been able to take fluid nourishment only in small mouthfuls at a time. Present condition; exceedingly cachectic and greatly emaciated. Slight swelling of the supra-clavicular and inguinal glands. Physical signs of fibroid phthisis. On sounding the œsophagus a firm resisting point is found thirteen inches from the dental arch. After prolonged and somewhat painful effort, an English No. 5 sound was passed. Weight of the patient 105 pounds (normal weight 119 pounds). In ten days a No. 12 sound could be passed through the stricture and the patient had gained eight pounds; but in spite of daily sounding there was a constant narrowing of the stricture, so that frequently the smallest sounds could not be passed.

Since it was very clear that no improvement could be hoped for by the use of bougies and that the patient was steadily losing strength from starvation, gastrostomy was performed. An incision was made in the left epigastrium parallel to the lower margin of the ribs, a portion of the stomach-wall was selected as near the cardia as possible, and its serosa was sutured to the parietal peritoneum by twelve threads; the wound was tamponaded by iodoform gauze, and four days later the stomach was opened by an incision one third of an inch in length. The edges of this wound were then sutured to the skin incision. After the operation liquid nourishment was administered by means of the fistula and also by the mouth. There was no marked vomiting—no fever. In ten days the patient swallowed a shot to which a small thread was attached. This thread was hooked from the stomach by means of a bent probe and to its distal end was attached a strong silk ligature which was drawn past the stricture, so that one end projected from the mouth and the other from the gastric fistula. To this ligature was now attached a No. 7 sound, which was drawn into the stomach and upward through the stricture without requiring much force or giving the patient a great deal of pain. This sounding from below was continued daily, until in ten days a No. 12 sound could readily be drawn through.

The patient experienced no pain from this operation but simply suffered from an irritative cough lasting for some minutes. He was able to take semiliquid nourishment. The gastric fistula was fairly well closed by means of a tracheal canula held in place by an elastic bandage. In one month a No. 12 œsophageal sound was readily passed without using the guiding ligature from the stomach up to the mouth. The ligature was now withdrawn. Frequent efforts made at sounding from above were unsuccessful. A month later, by means of a sound passed from the stomach through the stricture, a sound from above was guided through the latter. This method of sounding was continued for another month, until the patient could swallow finely chopped meat and steadily gained in strength. Finally a No. 6 bougie was successfully passed from above without guidance from below, and at the same sitting the dilatation was continued up to a No. 10. In a few days a No. 14 was passed and the patient instructed in its use. Since the stricture showed no further tendency to contract, and at times great irritation of the skin was produced by the stomach contents, the gastric fistula was finally closed, the mucous and serous surfaces being sutured separately. The patient was nourished by enemata for three days, a little iced milk only being taken by the mouth. A No. 7 sound was then passed through the stricture which was in three days run up to No. 14, and the patient left the hospital in a comfortable condition, passing the sound daily himself. The diagnosis was malignant stricture.. He died later of phthisis, when this diagnosis was confirmed.

The second case was that of a child eight and a half years old. In October, 1885, she had taken a swallow of sulphuric acid. After an illness of some weeks, during which she vomited blood and had so much difficulty in swallowing that nutrient enemata were required, she recovered sufficiently to be nourished by liquid food. The difficulty in swallowing steadily increased, so that finally only the smallest sounds could be passed into the stomach. The use of the instruments was exceedingly painful and always caused some bleeding. In eight months the patient began to regurgitate fluids. Four months later persistent sounding caused such improvement that a No. 5 bougie could be passed and she was again able to take semi-solid food. In spite of most careful attention contraction again took place, liquid nourishment was taken with increasing difficulty, and a portion of what was swallowed regurgitated immediately. The patient assisted swallowing efforts by stroking and kneading the neck with both hands, but was successful in forcing only a very small portion of the liquid through the stricture. Emaciation was rapidly progressive. On examination, August, 1887, the sound encountered an impassable obstruction six and a half inches from the dental arch. A No. 4 Charrière bougie was passed beyond this obstruction but encountered another three inches further down. The passage of bougies was attended with great difficulty, and no appreciable dilatation was accomplished by them. From the middle of November sounds could no longer be passed. Yet she was able to swallow liquid and semi-fluid nourishment fairly well, and her general condition was greatly improved. This improvement was only temporary, dysphagia became so pronounced that frequently she took no food for a day at a time. By June of 1888 she had emaciated almost to a skeleton, the stricture was impermeable, the liquids were regurgitated *in toto* either at once or after a short interval. After the employment of nutrient enemata for a short time gastrostomy was performed.

Operation as before. An opening a fifth of an inch long made two days afterward in the stomach wall. Three weeks later she drank some milk, general condition greatly improved. A few days later she swallowed a shot to which a thread was attached; the shot was caught in the stricture, but a loop of the thread passed through and was drawn out through the gastric fistula. By means of this thread a silk ligature was drawn through the mouth and œsophagus till its two ends projected from the stomach and mouth respectively. Dilatation from the stomach was regularly practised. In a few days a No. 5 sound was passed in this way, without causing either pain or bleeding. After No. 7 was passed the patient was nourished entirely by the mouth. Three months later, after considerable difficulty, a No. 7 soft Nélaton catheter was passed by the mouth. The ligature was now withdrawn, and after a few days the soft bougie had threaded upon it a thicker English sound, which was thus guided through the stricture. This treatment was continued daily for about two weeks, when the patient aided by swallowing efforts was able to pass an English No. 9. Two weeks later the gastric fistula was closed. The patient has since been passing daily a No. 15 sound, has no difficulty in swallowing, and has gained eighteen pounds.

The value of retrograde dilatation is confirmed by successful cases reported by von Bergmann, Loreta, Kocher, Hjort, Caponotto, and Maydl.

CHOLECYSTOTOMY.

DR. R. W. STEWART reports (*N. Y. Medical Journal*, May 25, 1889) the case of a woman, æt. fifty-nine years, who had had symptoms of either biliary or renal colic for many years. They at last became so severe that operation was decided upon, and the appearance of jaundice determined the choice in favor of cholecystotomy.

An incision of about one inch in length was made in the fundus of the gall-bladder. It was noticed that the wall of the gall-bladder was abnormally thick and that no bile escaped from the incision. A calculus was found impacted in the cystic duct. The extraction of the calculus was attended with considerable difficulty, as it not only seemed to be impacted in the duct, but also encysted, for a firm fibrous membrane surrounding the calculus had to be torn through before the calculus could be seized. Once exposed, the calculus was easily crushed and removed piecemeal; it consisted chiefly of inspissated bile. After washing out the débris the incision in the gall-bladder was closed by a continuous catgut suture, and the liver allowed to assume its natural position. The peritoneal toilet was completed in the usual manner, and the abdominal wound closed with silver sutures. The patient made a rapid recovery.

The points of special interest connected with the case are: (1) The long duration of the trouble (thirty years). (2) The absence of marked jaundice at any time. (3) The presence of blood, pus, and bile in the urine, which obscured the diagnosis between renal and biliary calculi. (4) The impossibility of suturing the gall-bladder to the abdominal wound on account of its collapsed state and its distance from the border of the liver. (5) The thickening of the gall-bladder, probably due to hypertrophy of its muscular fibres, caused by repeated ineffectual attempts to expel the calculus.

ELECTRICAL ILLUMINATION OF THE BLADDER IN THE DIAGNOSIS OF OBSCURE VESICAL DISEASE.

MR. E. HURRY FENWICK contrasts as follows (*British Medical Journal*, May 4, 1889) electric cystoscopy and digital exploration for diagnostic purposes, basing his comparison of the two methods upon two lists of forty-three cases each, one in the practice of Sir Henry Thompson, the other in his own.

1. Digital exploration is a cutting operation, needing confinement to bed. Electric cystoscopy can be performed routinely and rapidly in private or out-patient practice.

2. The former operation needs an anæsthetic. In the latter it is not absolutely necessary. In the greater number of cases Mr. Fenwick has neither used gaseous narcosis nor cocaine; he employs anæsthesia (*a*) in females for delicacy, (*b*) in tuberculosis or similar cases, where the prostatic urethra is extremely sensitive, (*c*) in order to make a leisurely prognosis of a discovered growth, so as to determine the expediency of operating.

3. Digital exploration is not absolutely free from risk of hemorrhage, and frequently either a troublesome fistula or a hyper-sensitive scar is left in the urethra. Cystoscopy is, if it be gentle and purposive, as free from risk as routine catheterism or sounding.

4. In most cases the educated eye is to be preferred to, and relied upon, rather than the finger.

5. The cystoscope affords us not infrequently a sound prognosis, and intimates when to interfere and when to leave alone; if it indicates operative interference, it also points to the path (suprapubic or perineal) best suited for access to the growth, and for its complete eradication.

6. It must be readily admitted that digital exploration allows of the bladder being subsequently drained; but the rest thus afforded is not always necessary, nor is it always productive of benefit.

PROPERITONEAL INGUINAL HERNIA.

BUTZ (*St. Petersburg med. Woch.*, 1888, No. 38) makes the following propositions in regard to properitoneal inguinal hernia:

1. The hernia is usually congenital.
2. The testicle is atrophic; its descent incomplete.
3. There is either a swelling over Poupart's ligament, or a sense of increased resistance or tenderness on pressure.
4. There is atrophy of the abdominal walls at the seat of swelling.
5. After apparently successful taxis the abdominal pain becomes more intense.
6. After herniotomy the loops of gut lying in the scrotum cannot be reduced.
7. If replaced the loops of intestine again descend, or lie fixed in close proximity to the internal abdominal ring.
8. On dividing the properitoneal sac there is a discharge of hernial serum.

FORWARD DISLOCATION OF THE LOWER END OF THE ULNA AND UPPER END OF THE FIBULA.

DR. LEWIS STIMSON reports (*New York Medical Journal*, May 25, 1889) instances of these two rare luxations.

In the first the hand and wrist had been caught and squeezed between a dumb waiter and the framework around it. The hand was in complete supination and could not be pronated. The normal prominence of the ulna at the back and side of the wrist was lost, and on palpation the ulnar border of the lower end of the radius and the portion of the upper posterior border of the carpus corresponding to the ulna could be distinctly traced. The relations of the carpus to the radius and metacarpus were unchanged. On passing the finger from the fifth metacarpal upward along the dorsum and ulnar side of the carpus a bony lump (presumably the unciform) could be felt, and then a narrow, transversely elongated bone, which I thought to be the cuneiform. Above the latter was a deep depression, in front of which, on the front of the wrist, the lower end of the ulna could be felt. The triangular fibro-cartilage could not be recognized. Reduction was easily made.

In the second, the patient had sprung sideways to avoid being run over, and had felt a sudden, sharp pain below the knee at the outer side. The head of the fibula could be readily recognized, by the eye and touch, projecting on the outer side of the leg, with the tendon of the biceps showing prominently as it curved downward and outward, its convexity directed forward and somewhat inward. The upper, outer, anterior, and posterior surfaces of the head of the fibula could be palpated readily. The distance from the head to the tuberosity of the tibia was one centimetre less than on the other leg, and the circumference of the limb just below the patella was one centimetre greater than on the other side. Reduction was easy.

THE OPERATIVE TREATMENT OF TUBERCULOUS JOINTS.

RIEDEL (*Centralblatt für Chirurgie*, No. 2, 1889, p. 341), after consideration of the question, whether the origin of tuberculous joint disease lies primarily in the bones or in the soft parts, and also discussing the functional results to be expected after the operation upon large joints of the extremities in children and adults, comes to the following conclusion:

1. Every osseous change which leads to the formation of a sequestrum necessitates operation at all ages. The presence of a sequestrum is chiefly indicated by the formation of abscesses, great pain, and the occurrence of contracture, but these symptoms are not always to be relied upon.

2. Every osseous change which limits itself to the formation of granulations, especially caseous foci without a sequestrum, as well as every case of primary tuberculosis of the soft parts, requires operative treatment. This is true in the case of adults over seventeen years of age, if these processes originated at that age, or if, beginning earlier, they have recently undergone exacerbation. It is true also in children, if the ankle- or wrist-joint is diseased.

3. If these two processes have their seat in either the knee or the elbow, operative interference should be postponed, if possible. If the shoulder- or hip-joint is affected they should still more carefully be avoided, especially in coxitis. Suppuration indicates operation in these cases.

As regards the operation itself, RIEDEL points out the following conditions as especially important: 1. The removal of the diseased tissues must be complete. For this purpose the joint must be freely opened by large incisions, and the synovial membrane removed with knife and scissors, not merely curetted. All fistulæ must be widely opened. He objects to partial operations, in which the radical removal of tuberculous tissues cannot be accomplished. 2. As every infection from without amalgamates the tuberculous tissues with those which surround them, the operation should be done, if possible, while the skin is intact. He protests energetically against operations limited to the opening of deep-seated abscesses of large joints, and ignoring the more radical operations upon the joint itself. 3. As drainage tubes always leave behind them cavities, which heal by granulation, and which sometimes favor a return of the disease through the development of spores or bacilli which have been left in the tissues, he recommends the avoidance of drainage so far as possible. This can only be done in aseptic wounds. In such wounds he does not drain large cavities in or between the ends of the bones, but leaves the wound, the deeper parts of which may undergo primary union, completely open. Only when broad even surfaces of bone are opposed to each other, does he sew up the wound, and use short, superficial drainage tubes in the incision. 4. To dispense with the drainage tubes the wound must be as simple as possible, adapted for rapid union, and all diseased parts must be thoroughly removed. He opposes the attempts made by other surgeons to obtain complete restoration of function through removal of bony processes, while sparing the ligaments, believing it to be preferable to remove thoroughly the dangerous disease before making the restoration of function the chief object.

RUPTURE OF THE POPLITEAL ARTERY.

MR. A. R. ANDERSON reports (*The Lancet*, May 11, 1889) the case of a boy, aged fifteen years, whose knee had been crushed, with the result of rupturing the popliteal artery at about the origin of the superior internal articular artery. The hemorrhage which led to the diagnosis did not occur for two months. The patient was twice transfused when almost exsanguine. He ultimately recovered.

With respect to the treatment of this accident, the most satisfactory method appears to be that of cutting down on and tying the ends of the ruptured vessel, in both the incomplete form and also when complete, if the case be seen before gangrene has become inevitable. It is true that distinguished surgeons have occasionally, but very rarely, failed to find the ends of the vessel amid the mass of blood and debris. But in favor of this operation it may be said: (1) that it places the patient in the safest condition possible as far as the risk of any recurrence of the hemorrhage is concerned; (2) that by early clearing out of the masses of clot from the popliteal space a potent factor in the production of gangrene is removed—namely, the pressure on the collateral circulation; and (3) that, if gangrene should unfortunately ensue, amputation can easily be performed, with a scarcely diminished prospect of success. In partial rupture ligature of the femoral has been advocated. But the objection to the operation appears to lie in this, that if with an enfeebled circulation in the limb, such as must be present with a partially ruptured popliteal artery, the femoral is ligatured, the risk of gangrene would surely be as great or greater than if the vessel were cut down on and tied.

THE TECHNIQUE OF LIGATION OF THE INFERIOR THYROID ARTERY.

DR. RYDYGIER (*Centralblatt für Chirurg.*, No. 14, 1889) describes a new incision for securing the inferior thyroid artery when struma or other pathological conditions indicate the cutting off of the blood supply to the thyroid gland. His objection to the ordinary operation is placed mainly on cosmetic grounds, since as a result of incisions, four plainly visible scars are left in a conspicuous portion of the neck. In addition he claims that his method renders the operation much easier in performance, a careful following of his technique making this ligation no more difficult than that of the superior thyroid. Indeed, in some cases it is even easier.

The patient is placed in the dorsal decubitus, with the face turned away from the field of operation. An incision is made about an inch above the upper border of the clavicle and parallel to it; it should be about two and a half inches in length, and should be extended across the outer border of the sterno-cleido-mastoid so that the lesser half of the incision lies directly across this muscle. Having divided the skin, the platysma, and the superficial fascia, the index finger is thrust beneath the sterno-mastoid muscle; by tearing it opens the connective tissue between the sterno-mastoid and the inner edge of the scalenus anticus. The great vessels with the vagus nerve remain upon the posterior surface of the sterno-mastoid, and are with the latter lifted upward by the finger. In this opening one or two straight, long, blunt hooks are inserted, and the muscles together with the vagus nerve are drawn directly forward and inward so that the opening gapes as widely as possible. If the tissues have been sufficiently freed from the scalenus, the pulsating thyroid axis can readily be seen at the inner border of this muscle, together with the inferior thyroid artery which makes a distinct curve inward. This vessel can be positively identified by the superficial cervical or the ascending cervical artery, which obliquely crosses the incision. With two long dissecting forceps the artery is isolated, and by means of a strongly bent aneurism needle, a double thread is passed around it, and it is tied in two places. By means of blunt dissection the operation is rendered easier and more rapid, and the relations are no more disturbed than when the knife is used. Neither excessive deposit of fat nor the presence of small glands renders the operation materially more difficult. Large glands must be removed. The phrenic nerve is usually exposed during this operation, as it passes downward and inward.over the scalenus anticus muscle, but injury to it is almost an impossibility. Frequently the inferior thyroid artery is not so readily found at the inner border of the scalenus, being partly concealed beneath this latter muscle. It is readily exposed, however, by pressing the muscle aside.

Cosmetically speaking, the operation is most satisfactory; not only is the incision placed in a natural depression of the neck, but it lies so far down that it is concealed by the clothing. An oblique incision for the superior thyroid artery is also to be preferred, as it leaves a less visible scar than the ordinary cut.

RUPTURE OF THE TENDON OF THE QUADRICEPS FEMORIS.

DR. WILLIAM T. BULL narrates (*New York Medical Journal*, April 20, 1889) the recorded cases of this accident, and continues: These cases are too few to warrant our forming any conclusions as to the probable result of the immediate suture. But they demonstrate that the procedure has been thus far attended with no serious complications, such as suppurative synovitis. In one instance the recovery has been complete, and in two others there is every prospect of improvement; while the suture in open wounds—a rather more complicated condition to manage, since there is more danger of infection from the instrument inflicting the injury as well as foreign matters from the clothing and the exposure to the air—has been wholly satisfactory.

In view, then, of the uncertain functional results of the older methods of treatment and the encouragement offered by these few cases, Dr. Bull would certainly deem it justifiable and desirable to resort to the suture at once in many cases of rupture of this tendon. Where the ends are widely separated —say by an interval admitting two fingers—one might naturally expect a diminished power of extension caused by elongation of the tendon. Where the joint capsule is distended, one may properly assume that extravasated blood is present, and its absorption and the accompanying synovitis may lead to fibrous ankylosis and lessened power of flexion.

Cases that present either one or both of these conditions (and they will often coexist) should be treated with suture at once. On the other hand, ruptures in which there is a trifling separation of the ends of the tendon—say up to the width of an inch, or a finger's breadth—as well as those in which there is no effusion into the joint, should be treated by fixing the limb on a posterior splint, or incasing it in plaster-of-Paris, after drawing down the muscle and fixing it by bandaging from above downward. The patient may begin to walk at the end of four weeks. If the stiffness or lessened flexion continues, it may be overcome by passive motion. If the power of extension is found defective after the quadriceps muscle has regained its activity, it will be due to elongation of the tendon and a secondary suture of the tendon may then be undertaken.

OTOLOGY.

UNDER THE CHARGE OF

CHARLES H. BURNETT, M.D.,

AURAL SURGEON, PRESBYTERIAN HOSPITAL, ETC., PHILADELPHIA.

EXFOLIATION OF A LARGE PART OF THE LEFT MEMBRANA TYMPANI, IN CONSEQUENCE OF A BLOW ON THE HEAD.

A man, twenty-eight years old, received a severe blow on the left temple from a falling object; thereupon there immediately ensued bleeding from the nose and left ear; severe pain was also felt in the anterior half of the head, and the patient became dizzy. The next day the bleeding continued, and an ecchymosis appeared over the mastoid. The membrana was bluish-red in color, and showed a large perforation, running from above and behind, forward to the upper third of the manubrium. The vessels of the latter were injected; the mucous membrane of the tympanic cavity was moderately swollen and red. Blood oozed from two points, viz., behind and below from the remnant of the membrane, and above and in front from the point where the loosened piece of the membrana was still connected with the rest of the membrane.

The treatment consisted in removal of the coagula of blood by syringing, inflation by Politzer's method, and the insertion of a tampon of iodoform gauze. The hemorrhage ceased in five days. The vertigo appeared only when the patient stood up. A sense of constriction of the head continued. In six days the torn piece of drum-membrane was detached spontaneously, and syringed out. It was six millimetres long and four millimetres wide. The treatment now consisted of two daily instillations of a four per cent. solution of boric acid and alcohol. The discharge ceased, and there ensued a total regeneration of the lost tissue in the membrana tympani. The hearing became normal. The duration of the case was eight weeks.—*Archiv für Ohrenheilk.*, Bd. 28, April, 1889.